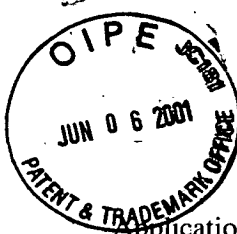


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Express-Mail No.: EL 340 685 219 US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

2181

Application of: Zerbe *et al.*

Serial No.: 09/478,916

Group Art Unit: 2781

Filed: January 6, 2000

Examiner: to be assigned

For: LOW LATENCY MULTI-LEVEL
COMMUNICATION INTERFACE

Attorney Docket No.: 9797-0050-999

INFORMATION DISCLOSURE STATEMENT

RECEIVED

JUL 18 2001

Assistant Commissioner for Patents
Washington, D.C. 20231

Technology Center 2100

Sir:

In accordance with the duty of disclosure provisions of 37 C.F.R. §1.56, there is hereby provided certain information which the Examiner may consider material to the examination of the subject U.S. patent application. It is requested that the Examiner make this information of record if it is deemed material to the examination of the application.

1. Enclosures accompanying this Information Disclosure Statement are:

- 1a. ☒ A list of all patents, publications, applications, or other information submitted for consideration by the Office.
- 1b. A legible copy of :
 - ☒ Each U.S. patent application publication and U.S. and foreign patent;
 - ☒ Each publication or that portion which caused it to be listed on the PTO-1449;
 - ☐ For each cited pending U.S. application, the application specification including the claims, and any drawing of the application, or portion of the application which caused it to be listed on the PTO-1449 including any claims directed to that portion;
 - ☒ all other information or portion which caused it to be listed on the PTO-1449.
- 1c. ☐ An English language copy of search report(s) from a counterpart foreign application or PCT International Search Report.

- 1d. ☐ Explanations of relevancy (ATTACHMENT 1(d), hereto) or English language abstracts of the non-English language publications.
2. ☒ This Information Disclosure Statement is filed under 37 C.F.R. §1.97(b):
- ☐ Within three months of the filing date of a national application other than a continued prosecution application under §1.53(d);
 - ☐ Within three months of the date of entry of the national stage as set forth in §1.491 in an international application;
 - ☒ Before the mailing of the first Office action on the merits;
 - ☐ Before the mailing of a first Office action after the filing of a request for continued examination under §1.114.

Accordingly, no fee or certification is required.

3. ☐ This Information Disclosure Statement is filed under 37 C.F.R. §1.97(c) after the period specified in 37 C.F.R. §1.97(b), but before the mailing date of any of a final action under 37 C.F.R. §1.113, a notice of allowance under 37 C.F.R. §1.311 or an action that otherwise closes prosecution in the application.

(Check either Item 3a or 3b)

- 3a. ☐ The Certification Statement in Item 5 below is applicable. Accordingly, no fee is required.
- 3b. ☐ The \$180.00 fee set forth in 37 C.F.R. §1.17(p) in accordance with 37 C.F.R. §1.97(c) is:
- ☐ enclosed
 - ☐ to be charged to Pennie & Edmonds LLP Deposit Account No. 16-1150.

(Item 3b to be checked if any reference known for more than 3 months)

4. ☐ This Information Disclosure Statement is filed under 37 C.F.R. §1.97(d) after the period specified in 37 C.F.R. §1.97(c), but on or before the date of payment of the issue fee.

The \$180.00 fee set forth in 37 C.F.R. §1.17(i)(1) is:

- ☐ enclosed.
- ☐ to be charged to Pennie & Edmonds LLP Deposit Account No. 16-1150.

The Certification Statement in Item 5 below is applicable.

5. ☐ Certification Statement *(applicable if Item 3a or Item 4 is checked)*

(Check either Item 5a or 5b)

- 5a. ☐ In accordance with 37 C.F.R. §1.97(e)(1), it is certified that each item of information contained in this Information Disclosure Statement was first cited in a

communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement.

- 5b. ☐ In accordance with 37 C.F.R. §1.97(e)(2), it is certified that no item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to the knowledge of the undersigned after making reasonable inquiry, was known by any individual designated in 37 C.F.R. §1.56(c) more than three months prior to the filing of this Information Disclosure Statement.
6. ☐ This application is a continuation application under 37 C.F.R. §1.60 or §1.53(b) or (d).

(Check appropriate Items 6a, 6b and/or 6c)

- 6a. ☐ A Petition to Withdraw from issue under 37 C.F.R. §1.313(b)(5) is concurrently filed herewith.
- 6b. ☐ Copies of publications ____ listed on the accompanying Form PTO-1449 are from prior application Serial No. ___, filed on ___, of which this application claims priority under 35 U.S.C. §120, are not being submitted pursuant to 37 C.F.R. §1.98(d).
- 6c. ☐ Copies of the publications ____ listed on the accompanying Form PTO-1449 were not previously cited in prior application Serial No. ___, filed on ___, and are provided herewith.
7. ☐ This is a Supplemental Information Disclosure Statement. *(Check either Item 7a or 7b)*
- 7a. ☐ This Supplemental Information Disclosure Statement under 37 C.F.R. §1.97(f) supplements the Information Disclosure Statement filed on ___. A bona fide attempt was made to comply with 37 C.F.R. §1.98, but inadvertent omissions were made. These omissions have been corrected herein. Accordingly, additional time is requested so that this Supplemental Information Disclosure Statement can be considered as if properly filed on ____.
- 7b. ☐ This Supplemental Information Disclosure Statement is timely filed within one (1) month of a PTO Notice under 37 C.F.R. §1.97(i).
8. ☐ In accordance with 37 C.F.R. §1.98, a concise explanation of what is presently understood to be the relevance of each non-English language publication is:


(Check Item 8a, 8b, or 8c)

- 8a. ☐ satisfied because all non-English language publications were cited on the enclosed English language copy of the PCT International Search Report or the search report from a counterpart foreign application indicating the degree of relevance found by the foreign office.
- 8b. ☐ set forth in the application.
- 8c. ☐ enclosed as an attachment hereto.

9. ■ The Commissioner is authorized to charge any additional fee required or credit any overpayment for this Information Disclosure Statement and/or Petition to Pennie & Edmonds LLP Deposit Account No. 16-1150.
10. ■ No admission is made that the information cited in this Statement is, or is considered to be, material to patentability nor a representation that a search has been made (other than a search report of a foreign counterpart application or PCT International Search Report if submitted herewith). 37 C.F.R. §§1.97(g) and (h).

Respectfully submitted,

Date June 6, 2001

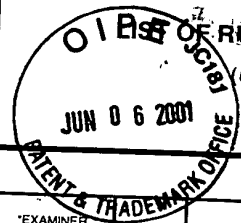


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Sheet 1 of 5
T.M.C. Bett. Bros



OF REFERENCES CITED BY APPLICANT

(Use several sheets if necessary)

ATTY. DOCKET NO.

9797-0050-999

APPLICATION NO.

09/478,916

APPLICANT, T.M.C.

Zerbe et al.

FILING DATE

January 6, 2000

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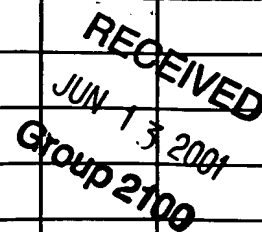
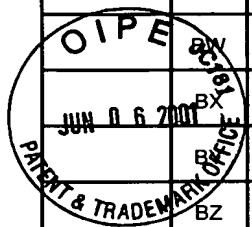
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U.S. PATENT DOCUMENTS

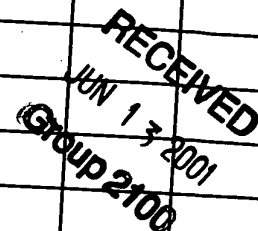
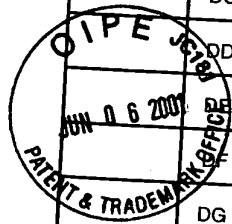
EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
AR	Re 30,182	12/25/79	Howson			
AS	2,912,684	11/10/59	Steele			
AT	3,051,901	08/28/62	Yaeger			
AU	3,078,378	02/19/63	Burley et al.			
AV	3,267,459	08/16/66	Chomicki et al.			
AW	3,484,559	12/16/69	Rigby			
AX	3,508,076	04/21/70	Winder			
AY	3,510,585	05/05/70	Stone			
AZ	3,560,856	02/02/71	Kaneko			
BA	3,569,955	03/09/71	Maniere			
BB	3,571,725	03/23/71	Kaneko et al.			
BC	3,587,088	06/22/71	Franaszek			
BD	3,648,064	03/07/72	Mukai et al.			
BE	3,697,874	10/10/72	Kaneko			
BF	3,731,199	05/01/73	Tazaki et al.			
BG	3,733,550	05/15/73	Tazaki et al.			
BH	3,753,113	08/14/73	Maruta et al.			
BI	3,754,237	08/21/73	de Laage de Meux			
BJ	3,761,818	09/25/73	Tazaki et al.			
BK	3,772,680	11/13/73	Kawai et al.			
BL	3,798,544	03/19/74	Norman			
BM	3,832,490	08/27/74	Leonard			
BN	3,860,871	01/14/75	Hinoshita et al.			
BO	3,876,944	04/08/75	Mack et al.			
BP	3,927,401	12/16/75	McIntosh			
BQ	3,978,284	08/31/76	Yoshino et al.			
BR	3,988,676	10/26/76	Whang			
BS	4,038,564	07/26/77	Hakata			
BT	4,070,650	01/24/78	Ohashi et al.			

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Group 2100

	BU	4,086,587	04/25/78	Lender			
	BV	4,097,859	06/27/78	Looschen			
	BW	4,131,761	12/26/78	Giusto			
	BX	4,181,865	01/01/80	Kohyama			
	BY	4,373,152	02/08/83	Jacobsthal			
	BZ	4,382,249	05/03/83	Jacobsthal			
	CA	4,403,330	09/06/83	Meyer			
	CB	4,408,135	10/04/83	Yuyama et al.			
	CC	4,408,189	10/04/83	Betts et al.			
	CD-1	4,528,550	07/09/85	Graves et al.			
	CD-2	4,438,491	03/20/84	Constant			
	CE	4,571,735	02/18/96	Furse			
	CF	4,602,374	07/22/86	Nakamura et al.			
	CG	4,628,297	12/09/86	Mita et al.			
	CH	4,779,073	10/18/88	Iketani			
	CI	4,805,190	02/14/89	Jaffre et al.			
	CJ	4,821,286	04/11/89	Graczyk et al.			
	CK	4,823,028	04/18/89	Lloyd			
	CL	4,841,301	06/20/89	Ichihara			
	CM	4,860,309	08/22/89	Costello			
	CN	4,875,049	10/17/89	Yoshida			
	CO	4,888,764	12/19/89	Haug			
	CP	5,003,555	03/26/91	Bergmans			
	CQ	5,045,728	09/03/91	Crafts			
	CR	5,115,450	05/19/92	Arcuri			
	CS	5,121,411	06/09/92	Fluharty			
	CT	5,172,338	12/15/92	Mehrotra et al.			
	CU	5,191,330	03/02/93	Fisher et al.			
	CV	5,230,008	07/20/93	Duch et al.			
	CW	5,243,625	09/07/93	Verbakel et al.			
	CX	5,280,500	01/18/94	Mazzola et al.			
	CY	5,295,155	03/15/94	Gersbach et al.			
	CZ	5,315,175	05/24/94	Langner			
	DA	5,331,320	07/19/94	Cideciyan et al.			



	DB	5,408,498	04/18/95	Yoshida			
	DC	5,425,056	06/13/95	Maroun et al.			
	DD	5,426,739	06/20/95	Lin et al.			
	DE	5,438,593	08/01/95	Karam et al.			
	DF	5,459,749	10/17/95	Park			
	DG	5,471,156	11/28/95	Kim et al.			
	DH	5,473,635	12/05/95	Chevroulet			
	DI	5,525,983	06/11/96	Patel et al.			
	DJ	5,633,631	05/27/97	Techman			
	DK	5,640,605	06/17/97	Johnson et al.			
	DL	5,684,833	11/04/97	Watanabe			
	DM	5,740,201	04/14/98	Hui			
	DN	5,793,815	08/11/98	Goodnow et al.			
	DO	5,793,816	08/11/98	Hui			
	DP	5,796,781	08/18/98	DeAndrea et al.			
	DQ	5,825,825	10/20/98	Altmann et al.			
	DR	5,872,468	02/16/99	Dyke			
	DS	5,892,466	04/06/99	Walker			
	DT	5,898,734	04/27/99	Nakamura et al.			
	DU	5,917,340	06/29/99	Manohar et al.			
	DV	5,933,458	08/03/99	Leurent et al.			
	DW	5,942,994	08/24/99	Lewiner et al.			
	DX	5,946,355	08/31/99	Baker			
	DY	5,949,280	09/07/99	Sasaki			
	DZ	5,969,579	10/19/99	Hartke et al.			
	EA	5,969,648	10/19/99	Garnett			
	EB	6,018,550	01/25/00	Emma et al.			
	EC	6,038,260	03/14/00	Emma et al.			
	ED	6,049,229	04/11/00	Manohar et al.			
	EE	6,052,390	04/18/00	Deliot et al.			
	EF	6,067,326	05/23/00	Johsson et al.			
	EG	6,078,627	06/20/00	Crayford			
	EH	6,084,931	07/04/00	Powell, II et al.			
	EI	6,094,461	07/25/00	Heron			



	EJ	6,101,561	08/08/00	Beers et al.			
	EK	6,114,979	09/05/00	Kim			
	EL	6,122,010	09/19/00	Emelko			
	EM	6,140,841	10/31/00	Suh			
	EN	6,195,397 B1	02/27/01	Kwon			

FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO
	EO	DE 43 20 930	01/05/95	Germany (Kommunikations Elektronik)				
	EP	EP 0 094 624	11/23/83	EPO (Siemens AG)				
	EQ	EP 0 490 504 A2	06/07/92	EPO (Northern Telecom Limited)				
	ER	JP 54051343	04/23/79	Japan (Hitachi Ltd)				
	ES	JP 56164650	12/17/81	Japan (Toshiba Corp)				
	ET	JP 59036465	02/28/84	Japan (Sony Corp)				
	EU	JP 60087551	05/17/85	Japan (Fujitsu Ltd.)				
	EV	JP 60194647	10/03/85	Japan (Hitachi Ltd)				
	EW	JP 02128201	05/16/90	Japan (Fuji Electric Co Ltd)				
	EX	JP 02140676	05/30/90	Japan (Advantest Corp)				
	EY	JP 04044691	02/14/92	Japan (Seiko Instr Inc)				
	EZ	JP 05143211	06/11/93	Japan (Omron Corp)				
	FA	JP 08202677	08/09/96	Japan (Mitsubishi Electric Corp)				
	FB	JP 08286943	11/01/96	Japan (Takaoka Electric Mfg Co Ltd)				
	FC	JP 09181778	07/11/97	Japan (Aiphone Co Ltd)				
	FD	WO 96/31038	10/03/96	PCT (Hitachi Ltd)				
	FE	WO 98/33306	07/30/98	PCT (Fukuda)				

OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, Etc.)

	FF	Current, 1994, "Current-mode CMOS multiple-valued logic circuits," <u>IEEE Journal of Solid-State Circuits</u> 29(2):95-107
	FG	Dally and Poulton, <u>Digital Systems Engineering</u> , Cambridge University Press, New York, NY, 1998, pp. 344-347 and 352.
	FH	Farjad-Rad <i>et al.</i> , "An equalization scheme for 10Gb/s 4-PAM signaling over long cables," Presentation. Center for Integrated Systems, Department of Electrical Engineering, Stanford University, July 28, 1997.
	FI	Farjad-Rad <i>et al.</i> , 1999, "A 0.4- μ m CMOS 10-GB/s 4-PAM pre-emphasis serial link transmitter," <u>IEEE Journal of Solid-State Circuits</u> 34(5):580-585
	FJ	IBM Technical Disclosure Bulletin, June 1967, "Use of multibit encoding to increase linear recording densities in serially recorded records," pp. 14-15
	FK	IBM Technical Disclosure Bulletin, Jan. 1968, "Coding data transmission," pp. 1295-1296
	FL	IBM Technical Disclosure Bulletin, July 1969, "Clock recovery circuit," pp. 219-220

	FM	IBM Technical Disclosure Bulletin, Nov. 1970, "Transmission by data encoding," pp. 1519-1520
	FN	IBM Technical Disclosure Bulletin, Feb. 1976, "Bidirectional communications within a binary switching system," pp. 2865-2866
	FO	IBM Technical Disclosure Bulletin, Feb. 1976, "Multilevel bidirectional signal transmission," pp. 2867-2868
	FP	IBM Technical Disclosure Bulletin, Oct. 1978, "Multilevel signal transfers," pp. 1798-1800
	FR	IBM Technical Disclosure Bulletin, Feb. 1981, "Circuit for multilevel logic implementation," pp. 4206-4209
	FS	IBM Technical Disclosure Bulletin, April 1983, "Multi level logic testing," pp. 5903-5904
	FT	IBM Technical Disclosure Bulletin, Sept. 1985, "Push-pull multi-level driver circuit for input-output bus," pp. 1649-1651
	FU	IBM Technical Disclosure Bulletin, Aug. 1986, "Multilevel CMOS sense amplifier," pp. 1280-1281
	FV	IBM Technical Disclosure Bulletin, Nov. 1992, "Multi-level encoded high bandwidth bus," pp. 444-447
	FW	IBM Technical Disclosure Bulletin, Feb 1995, "High speed complimentary metal oxide semiconductor input/output circuits," pp. 111-114
	FX	IBM Technical Disclosure Bulletin, April 1995, "Common front end bus for high-performance chip-to-chip communication," pp. 443-444
	FY	IBM Technical Disclosure Bulletin, April 1995, "High performance impedance controlled CMOS Drive," pp. 445-448
	FZ	IBM Technical Disclosure Bulletin, April 1995, "3-state decoder for external 3-state buffer," pp. 477-478
	GA	Matick, <u>Transmission Lines for Digital and Communication Networks: An Introduction to Transmission Lines, High-frequency and High-speed Pulse Characteristics and Applications</u> , IEEE Press, New York, NY, 1995, pp. 268-269.
	GB	Singh, 1987, "Four valued buses for clocked CMOS VLSI systems," <u>Proceedings of the Seventeenth International Symposium on Multiple-Valued Logic</u> , The Computer Society of the IEEE. Boston, Massachusetts, May 26-28, 1987, pp. 128-133
	GC	Smith, 1981, "The prospects for multivalued logic: A technology and applications view," <u>IEEE Transactions on Computers</u> C-30(9):619-634
	GD	Thirion, "10 Gig PMD Technologies," <u>IEEE Plenary</u> , Kauai, Hawaii, November 1999.
	GD	Vranesic, 1979, "Multivalued signaling in daisy chain bus control," <u>Proceedings of the Ninth International Symposium on Multiple-Valued Logic</u> , Bath, England, pp. 14-18.

EXAMINER

DATE CONSIDERED

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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